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Zarcheany

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(45) **Date of Patent: Jul. 26, 2016**

(54) **ORGANIZATIONAL SYSTEM AND METHOD FOR COLLECTING, STRUCTURING, LINKING, AND PRESENTING DISPARATE INFORMATION**

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(72) Inventor: **Shmuel Zarcheany**, Irvine, CA (US)

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(22) Filed: **Mar. 25, 2014**

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(51) **Int. Cl.**
G06F 3/048 (2013.01)
G06F 3/0484 (2013.01)

(52) **U.S. Cl.**
CPC ***G06F 3/0484*** (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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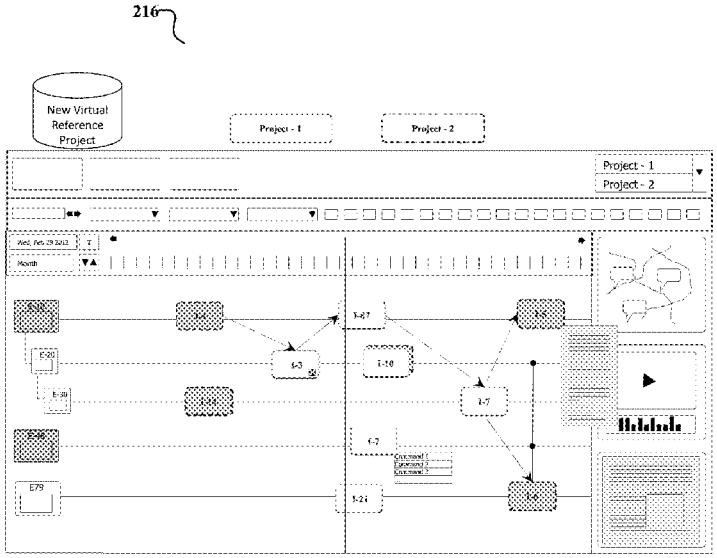
(74) *Attorney, Agent, or Firm* — Kafantaris Law Offices; Theo Kafantaris

(57) **ABSTRACT**

The present invention will provide a system that organizes content based on time, location, involved entities, and events, and relates this information to the user in an easy to read and intuitive display. This is accomplished by utilizing a data acquisition module, a link generation module, a conflicts module, a graphical data intersection module, a data filtering module, a mapping module, a presentation module, and a data integration module. These modules allow for a user to input events information into an easy to manipulate multiple interactive timeline display.

20 Claims, 14 Drawing Sheets



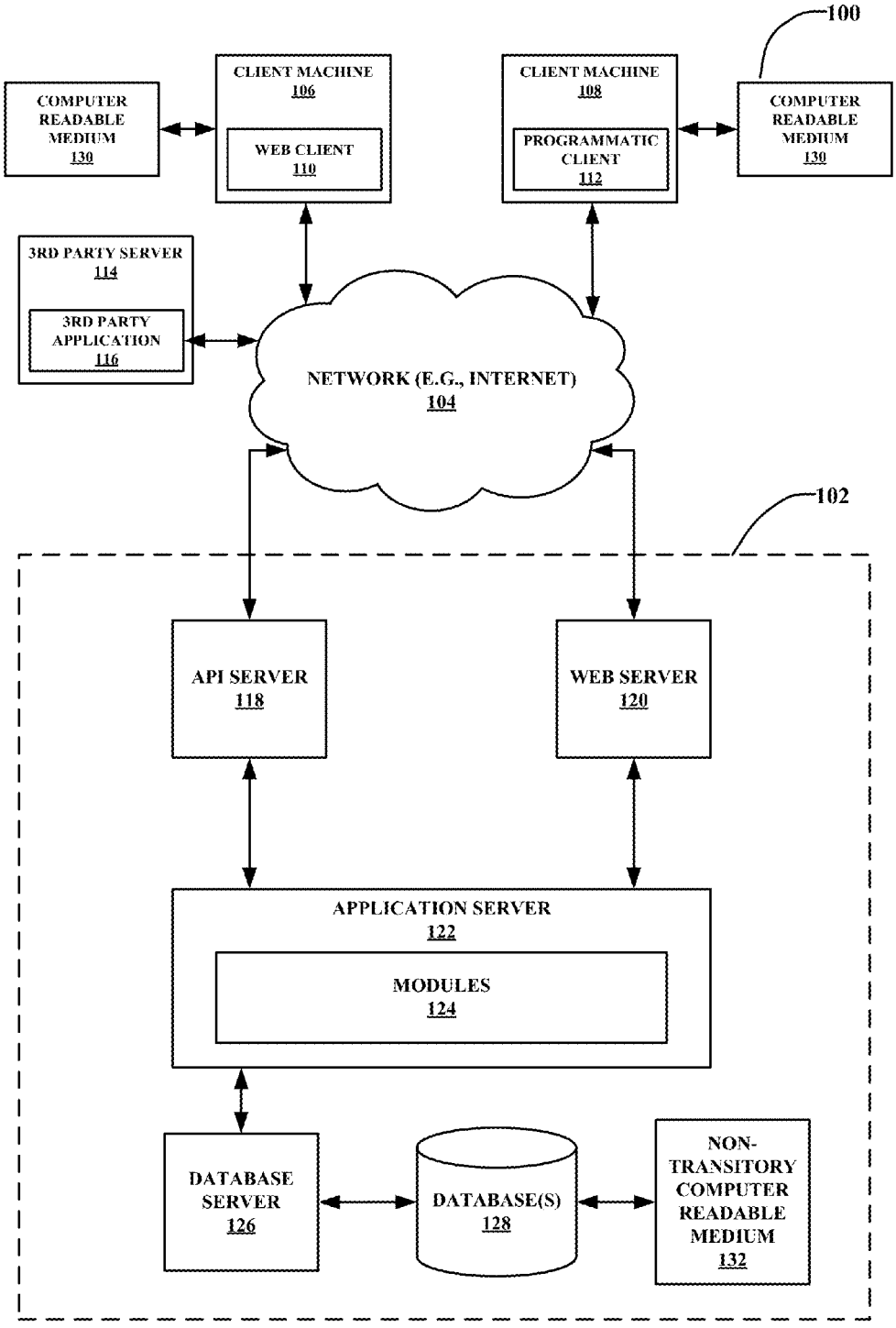

100
COMPUTER READABLE MEDIUM 130
CLIENT MACHINE 106
WEB CLIENT 110
CLIENT MACHINE 108
PROGRAMMATIC CLIENT 112
COMPUTER READABLE MEDIUM 130
3RD PARTY SERVER 114
3RD PARTY APPLICATION 116
NETWORK (E.G., INTERNET) 104
102
API SERVER 118
WEB SERVER 120
APPLICATION SERVER 122
MODULES 124
DATABASE SERVER 126
DATABASE(S) 128
NON-TRANSITORY COMPUTER READABLE MEDIUM 132

FIG. 1

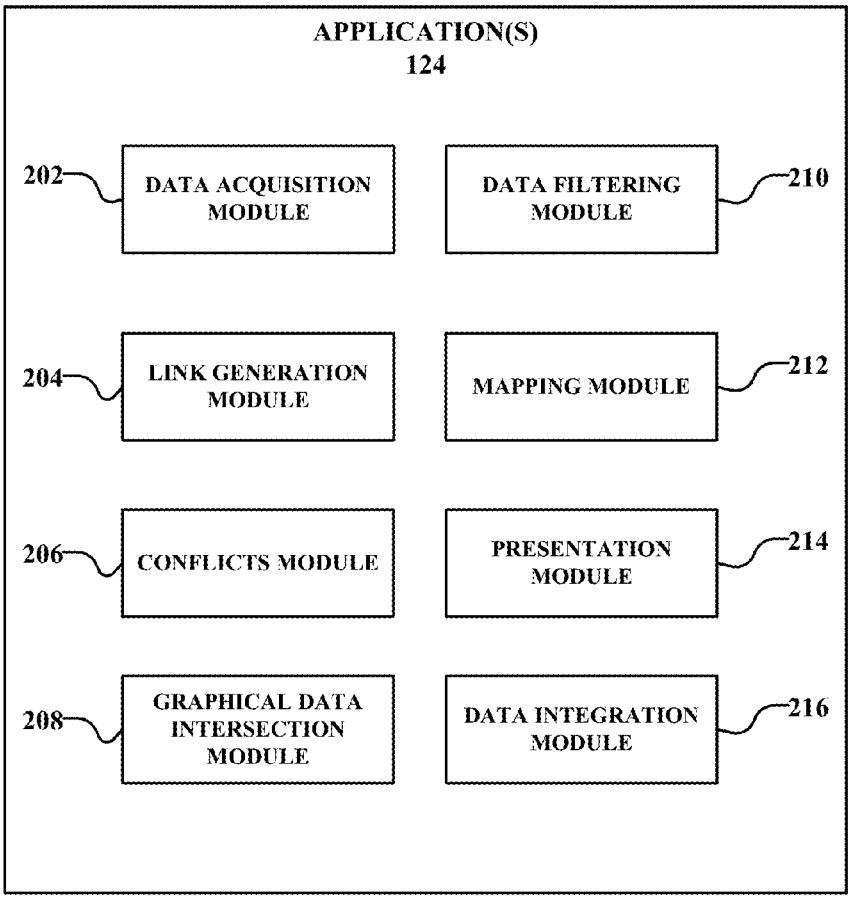

APPLICATION(S)
124
202
DATA ACQUISITION MODULE
210
DATA FILTERING MODULE
204
LINK GENERATION MODULE
212
MAPPING MODULE
206
CONFLICTS MODULE
214
PRESENTATION MODULE
208
GRAPHICAL DATA INTERSECTION MODULE
216
DATA INTEGRATION MODULE

FIG. 2

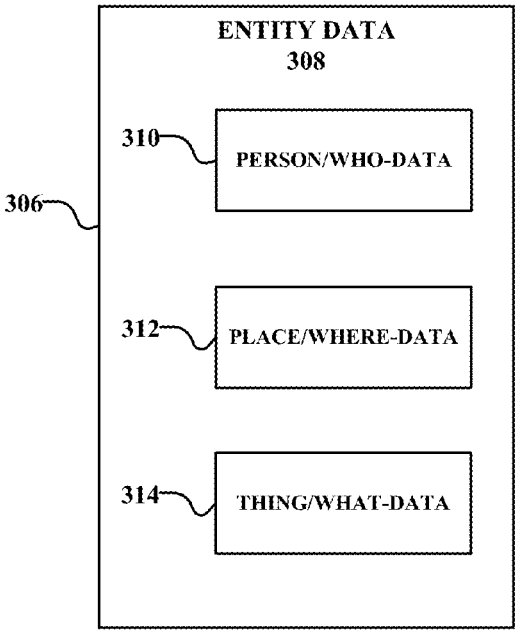


FIG. 3A

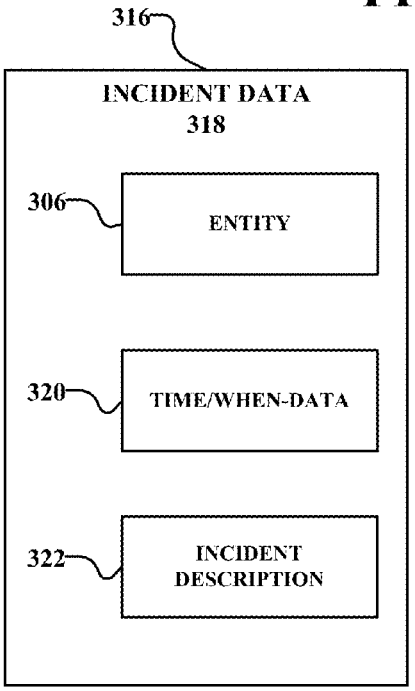


FIG. 3B

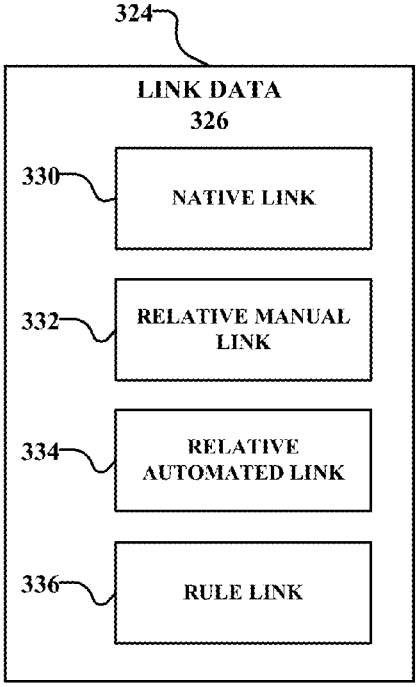


FIG. 3C

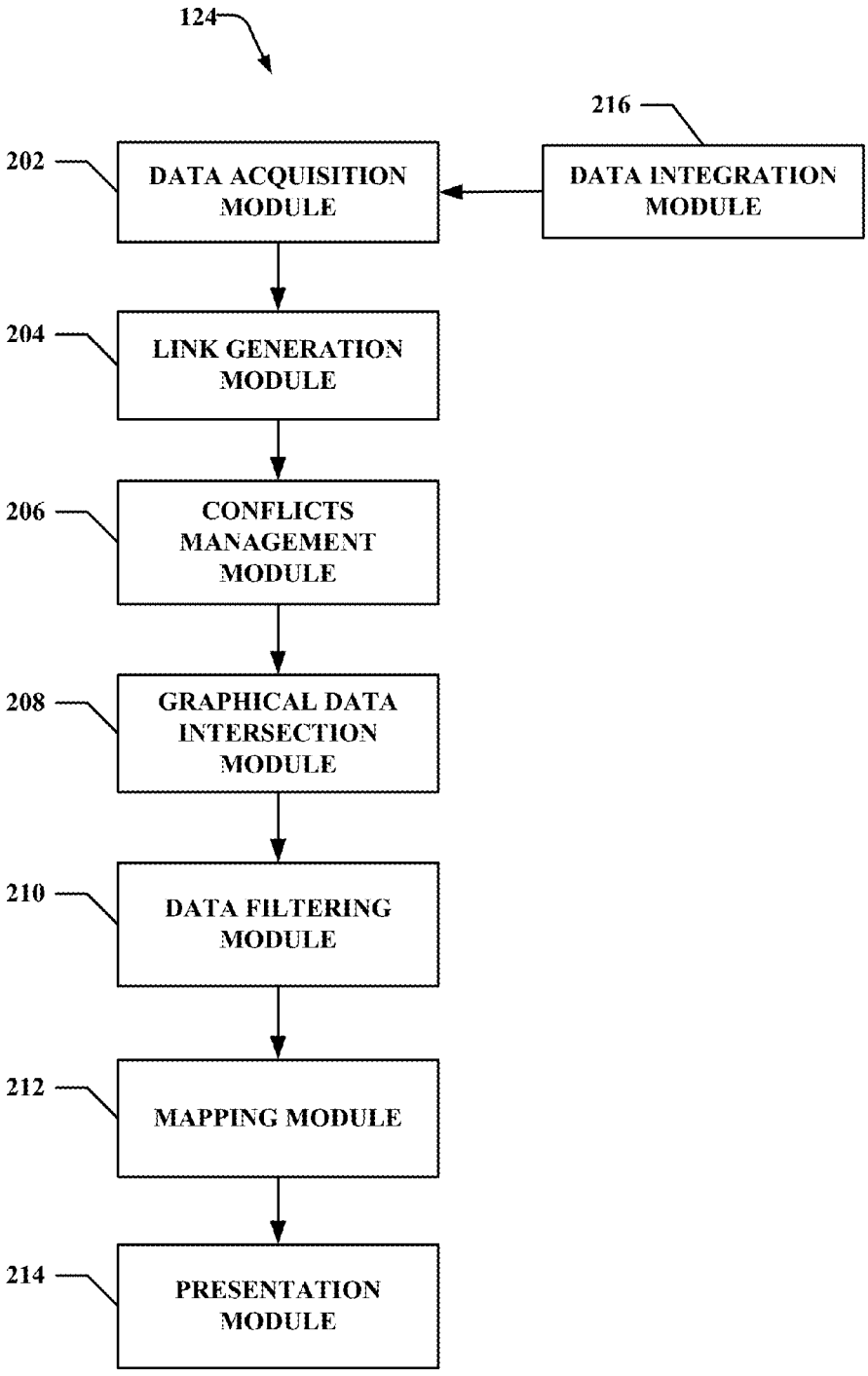

124
216
202
DATA ACQUISITION MODULE
DATA INTEGRATION MODULE
204
LINK GENERATION MODULE
206
CONFLICTS MANAGEMENT MODULE
208
GRAPHICAL DATA INTERSECTION MODULE
210
DATA FILTERING MODULE
212
MAPPING MODULE
214
PRESENTATION MODULE

FIG. 4

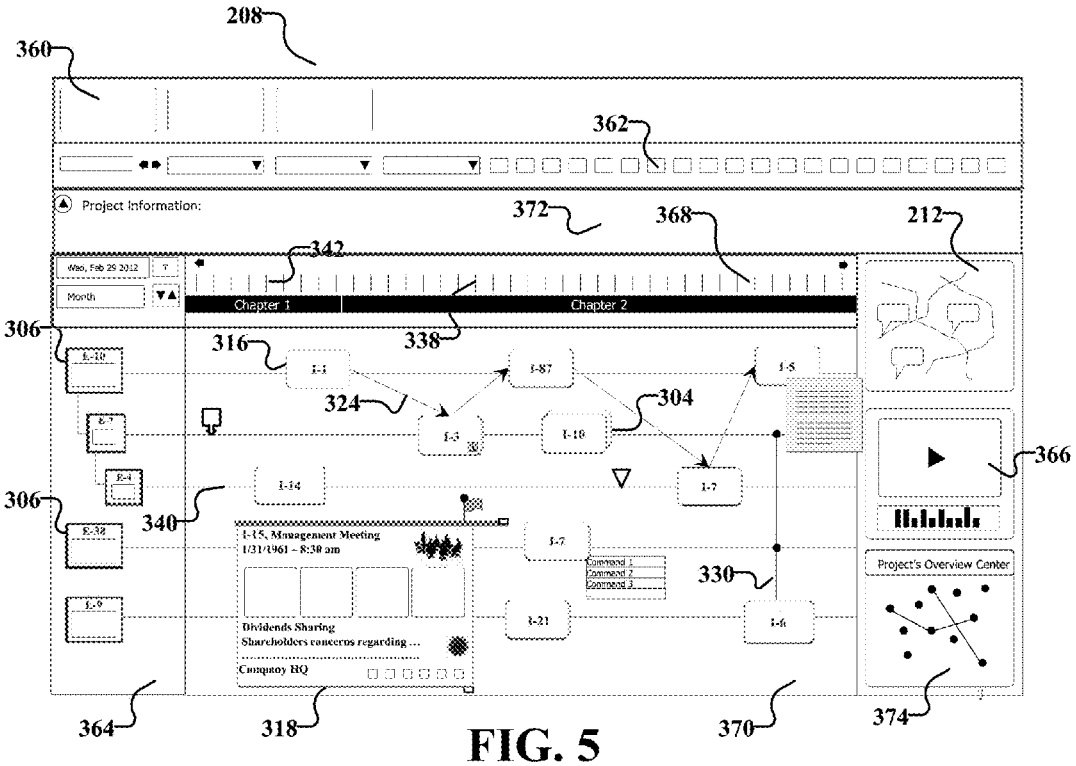

208
360
362
Project Information:
372
368
212
342
Chapter 1
Chapter 2
306
316
338
I-1
I-87
I-5
324
304
I-3
I-10
366
306
340
I-14
I-7
I-15, Management Meeting
1/31/1961 - 8:30 am
I-7
330
Project's Overview Center
Dividends Sharing
Shareholders concerns regarding ...
I-21
I-6
Company HQ
364
318
370
374

FIG. 5

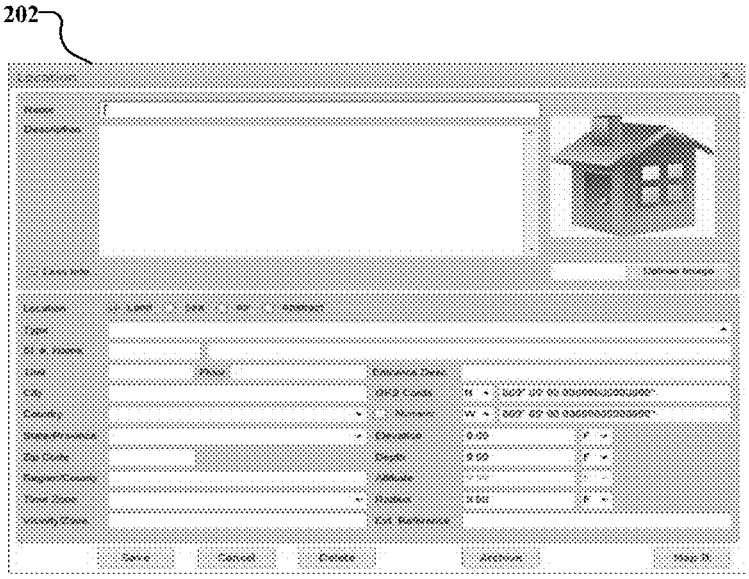

202

FIG. 6

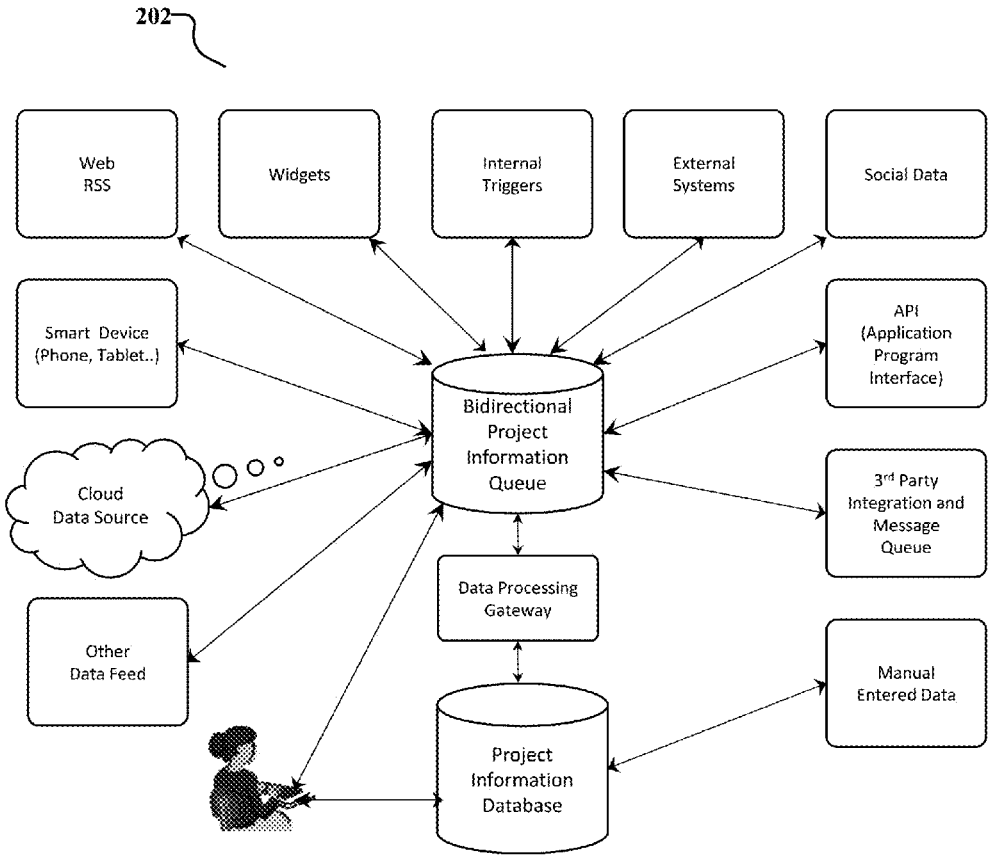

202
Web RSS
Widgets
Internal Triggers
External Systems
Social Data
Smart Device (Phone, Tablet..)
API (Application Program Interface)
Bidirectional Project Information Queue
Cloud Data Source
3rd Party Integration and Message Queue
Data Processing Gateway
Other Data Feed
Manual Entered Data
Project Information Database

FIG. 7

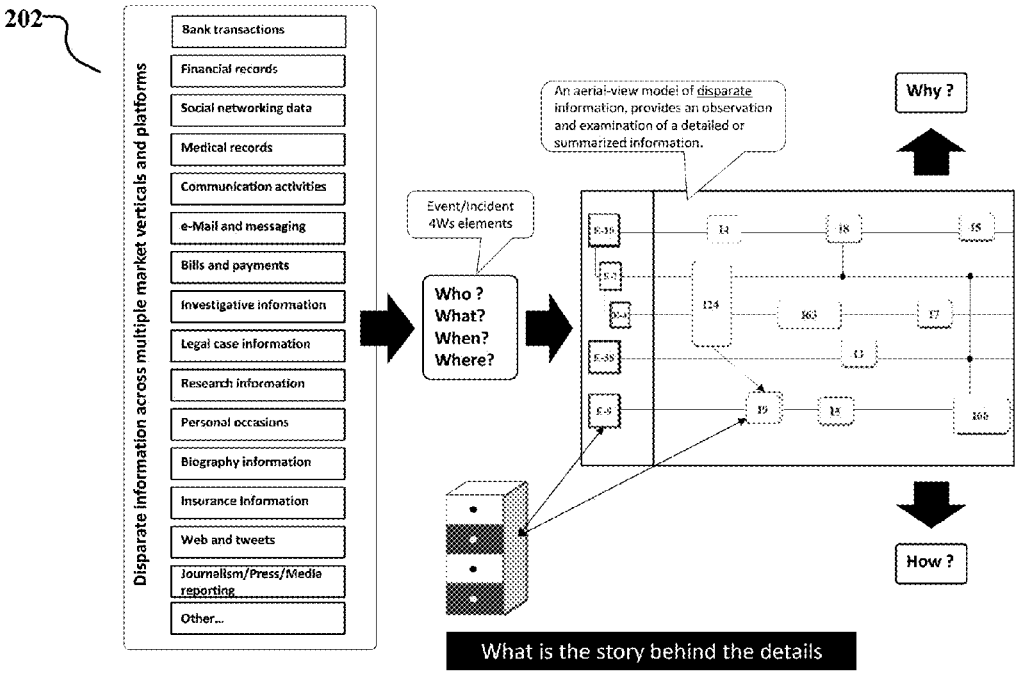

202
Disparate information across multiple market verticals and platforms
Bank transactions
Financial records
Social networking data
Medical records
Communication activities
e-Mail and messaging
Bills and payments
Investigative information
Legal case information
Research information
Personal occasions
Biography information
Insurance information
Web and tweets
Journalism/Press/Media reporting
Other...
Event/Incident 4Ws elements
Who ?
What?
When?
Where?
An aerial-view model of disparate information, provides an observation and examination of a detailed or summarized information.
Why ?
How ?
What is the story behind the details

FIG. 8

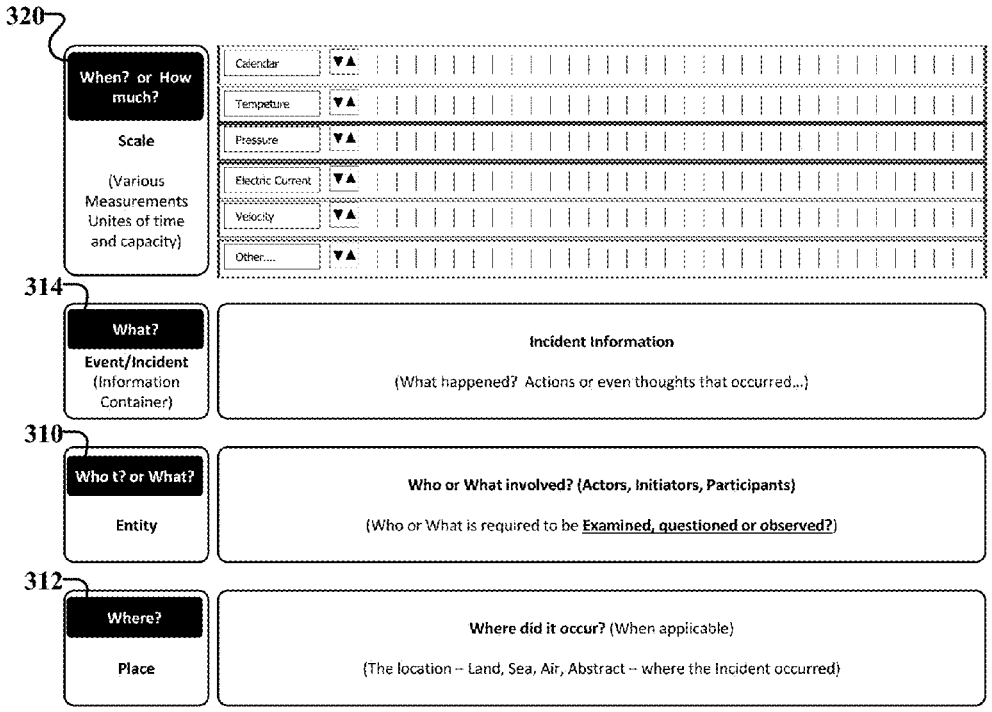

320
When? or How much?
Scale
(Various Measurements Unites of time and capacity)
Calendar
Tempeture
Pressure
Electric Current
Velocity
Other....
314
What?
Event/Incident
(Information Container)
Incident Information
(What happened? Actions or even thoughts that occurred...)
310
Who t? or What?
Entity
Who or What involved? (Actors, Initiators, Participants)
(Who or What is required to be Examined, questioned or observed?)
312
Where?
Place
Where did it occur? (When applicable)
(The location -- Land, Sea, Air, Abstract -- where the Incident occurred)

FIG. 9

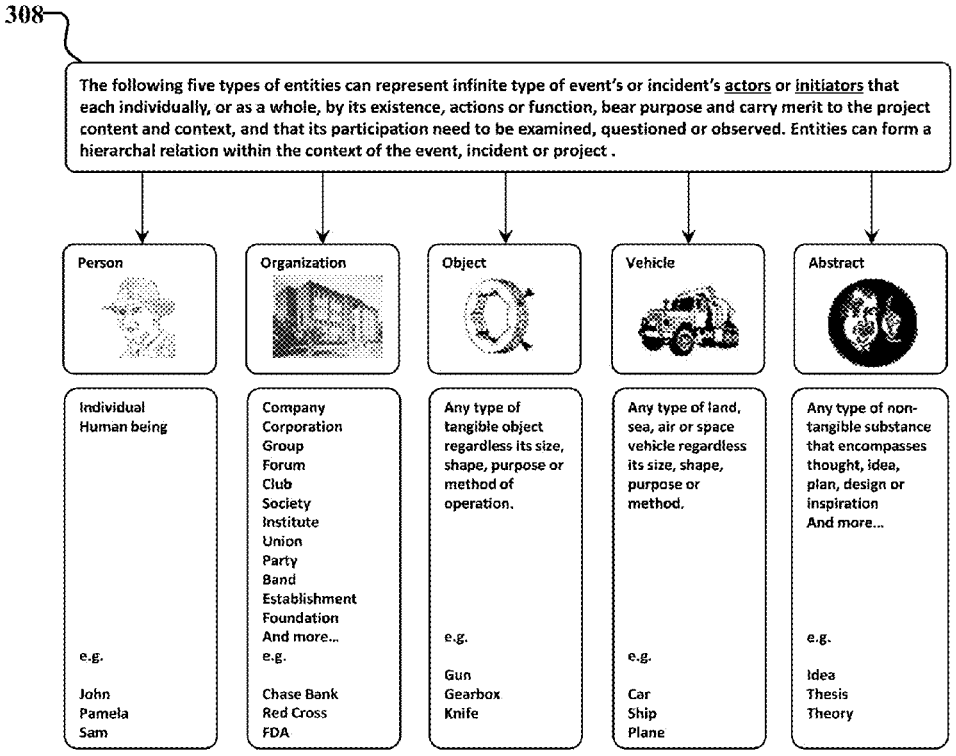

308
The following five types of entities can represent infinite type of event's or incident's actors or initiators that each individually, or as a whole, by its existence, actions or function, bear purpose and carry merit to the project content and context, and that its participation need to be examined, questioned or observed. Entities can form a hierarchal relation within the context of the event, incident or project .
Person
Individual
Human being
e.g.
John
Pamela
Sam
Organization
Company
Corporation
Group
Forum
Club
Society
Institute
Union
Party
Band
Establishment
Foundation
And more...
e.g.
Chase Bank
Red Cross
FDA
Object
Any type of tangible object regardless its size, shape, purpose or method of operation.
e.g.
Gun
Gearbox
Knife
Vehicle
Any type of land, sea, air or space vehicle regardless its size, shape, purpose or method.
e.g.
Car
Ship
Plane
Abstract
Any type of non-tangible substance that encompasses thought, idea, plan, design or inspiration
And more...
e.g.
Idea
Thesis
Theory

FIG. 10

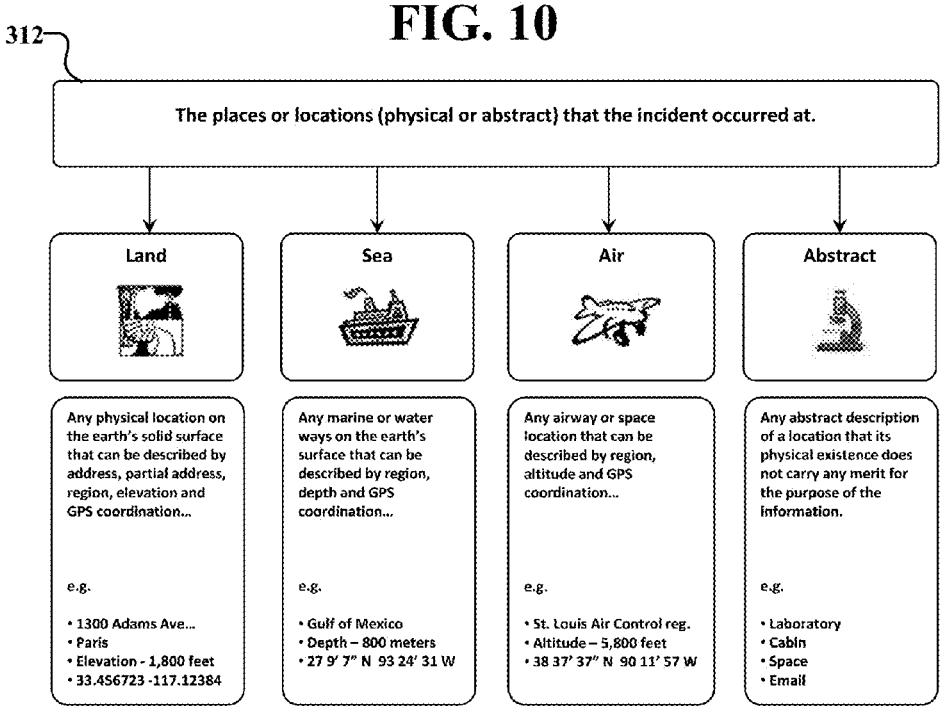

312
The places or locations (physical or abstract) that the incident occurred at.
Land
Any physical location on the earth's solid surface that can be described by address, partial address, region, elevation and GPS coordination...
e.g.
• 1300 Adams Ave...
• Paris
• Elevation - 1,800 feet
• 33.456723 -117.12384
Sea
Any marine or water ways on the earth's surface that can be described by region, depth and GPS coordination...
e.g.
• Gulf of Mexico
• Depth – 800 meters
• 27 9' 7" N 93 24' 31 W
Air
Any airway or space location that can be described by region, altitude and GPS coordination...
e.g.
• St. Louis Air Control reg.
• Altitude – 5,800 feet
• 38 37' 37" N 90 11' 57 W
Abstract
Any abstract description of a location that its physical existence does not carry any merit for the purpose of the information.
e.g.
• Laboratory
• Cabin
• Space
• Email

FIG. 11

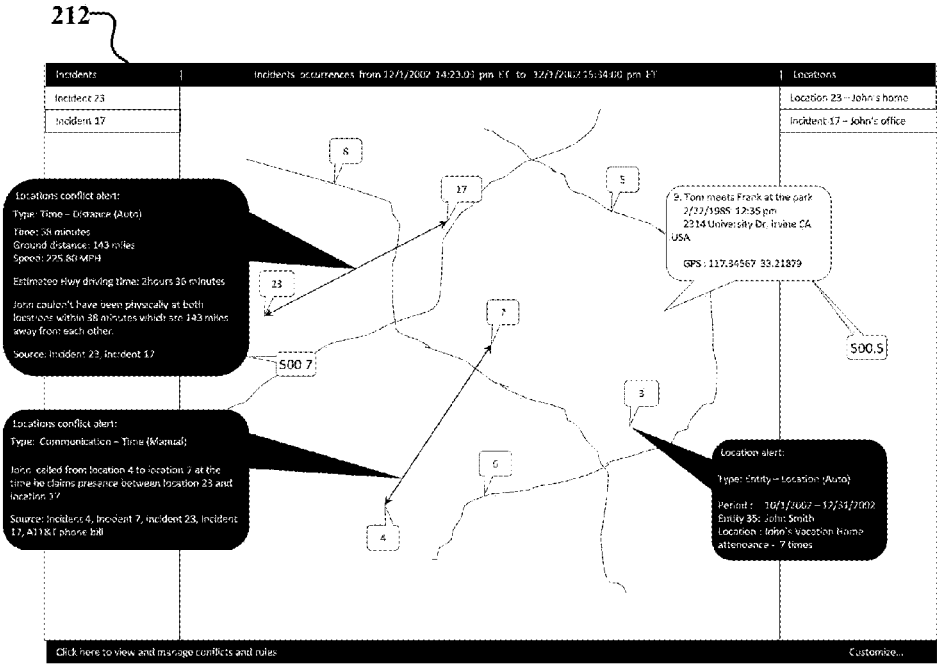

212
Incidents
Incidents occurrences from 12/1/2002 14:23:01 pm ET to 12/3/2002 15:34:00 pm ET
Locations
Incident 23
Incident 17
Location 23 – John's home
Incident 17 – John's office
Locations conflict alert:
Type: Time – Distance (Auto)
Time: 38 minutes
Ground distance: 143 miles
Speed: 225.80 MPH
Estimated Hwy driving time: 2hours 36 minutes
John couldn't have been physically at both locations within 38 minutes which are 143 miles away from each other.
Source: Incident 23, Incident 17
9. Tom meets Frank at the park
2/22/1985 12:35 pm
2214 University Dr. Irvine CA
USA
GPS: 117.34567 33.21879
500.5
500.7
Locations conflict alert:
Type: Communication – Time (Manual)
John called from location 4 to location 7 at the time he claims presence between location 23 and location 17
Source: Incident 4, Incident 7, Incident 23, Incident 17, AT&T phone bill
Location alert:
Type: Entity – Location (Auto)
Period: 10/1/2002 – 12/31/2002
Entity 35: John Smith
Location: John's vacation home
attendance = 7 times
Click here to view and manage conflicts and rules
Customize...

FIG. 12

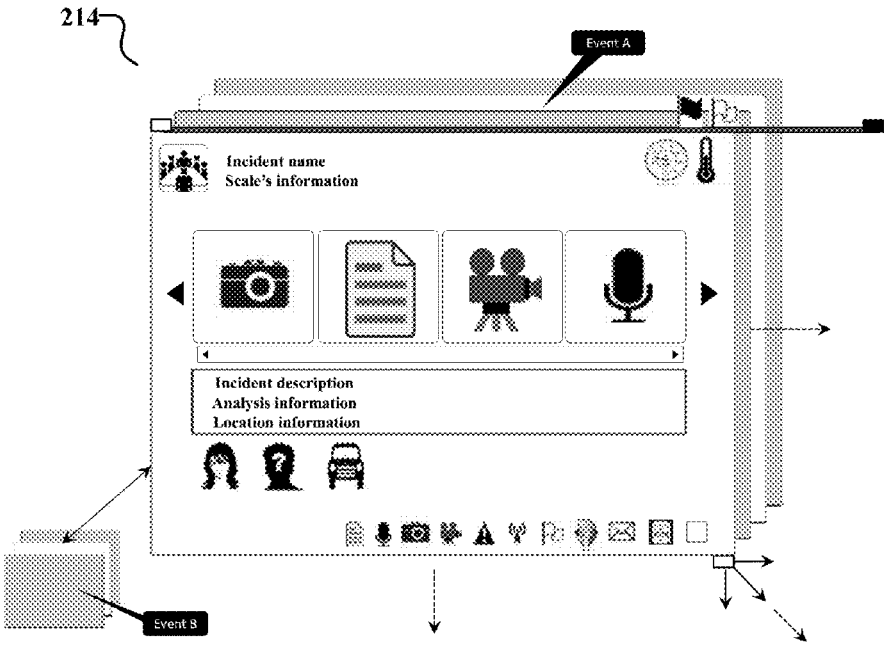

214
Event A
Incident name
Scale's information
Incident description
Analysis information
Location information
Event B

FIG. 13

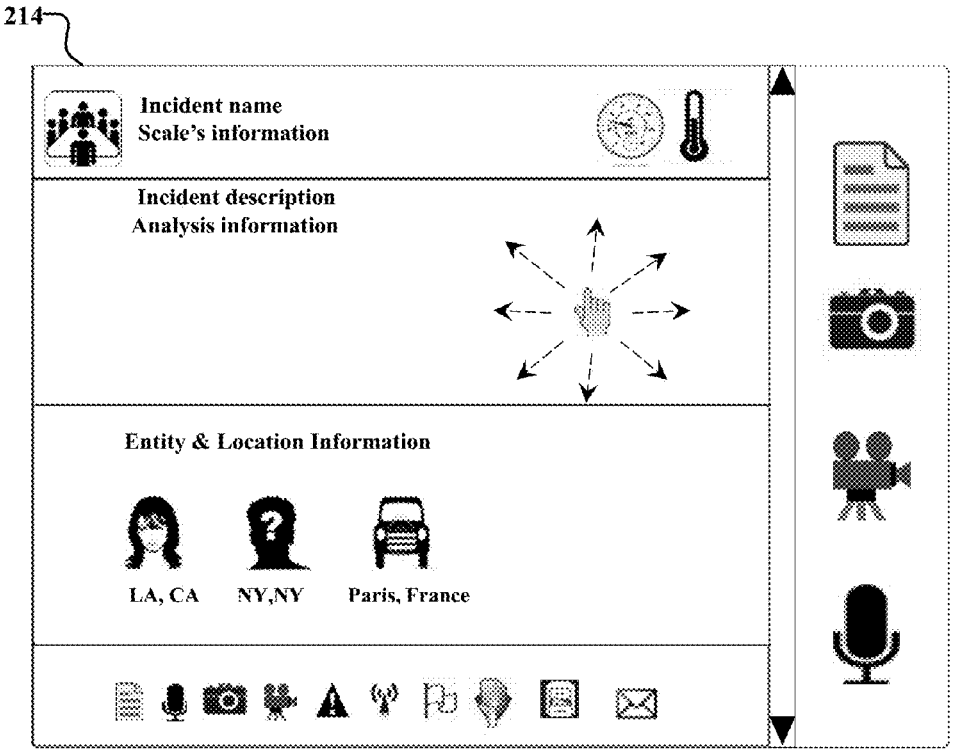

214
Incident name
Scale's information
Incident description
Analysis information
Entity & Location Information
LA, CA
NY,NY
Paris, France

FIG. 14

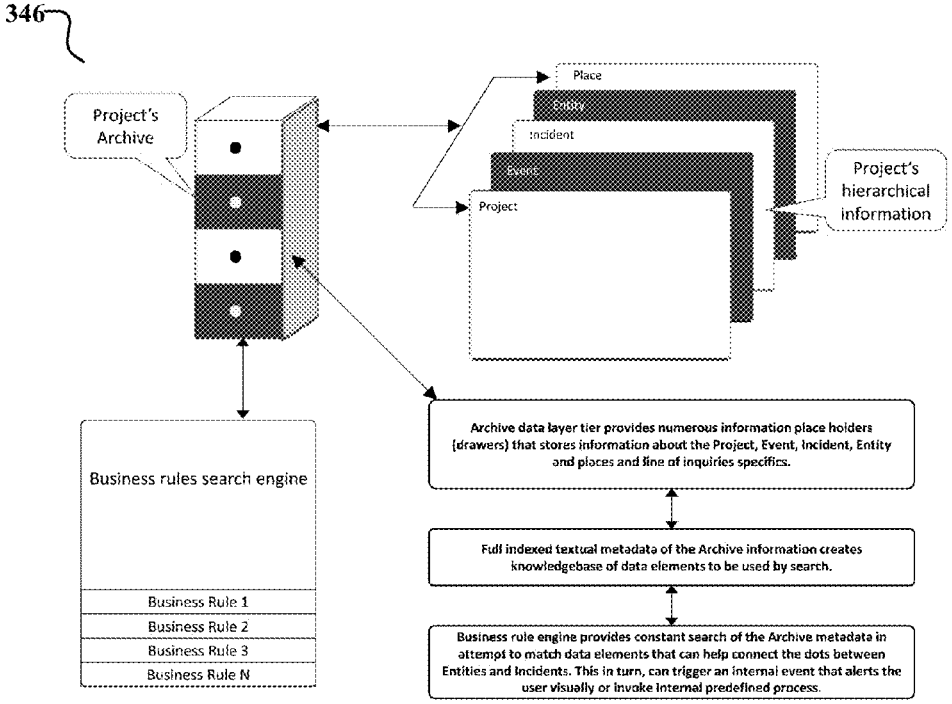

346
Project's Archive
Place
Entity
Incident
Event
Project
Project's hierarchical information
Business rules search engine
Business Rule 1
Business Rule 2
Business Rule 3
Business Rule N
Archive data layer tier provides numerous information place holders (drawers) that stores information about the Project, Event, Incident, Entity and places and fine of inquiries specifics.
Full indexed textual metadata of the Archive information creates knowledgebase of data elements to be used by search.
Business rule engine provides constant search of the Archive metadata in attempt to match data elements that can help connect the dots between Entities and Incidents. This in turn, can trigger an internal event that alerts the user visually or invoke internal predefined process.

FIG. 15

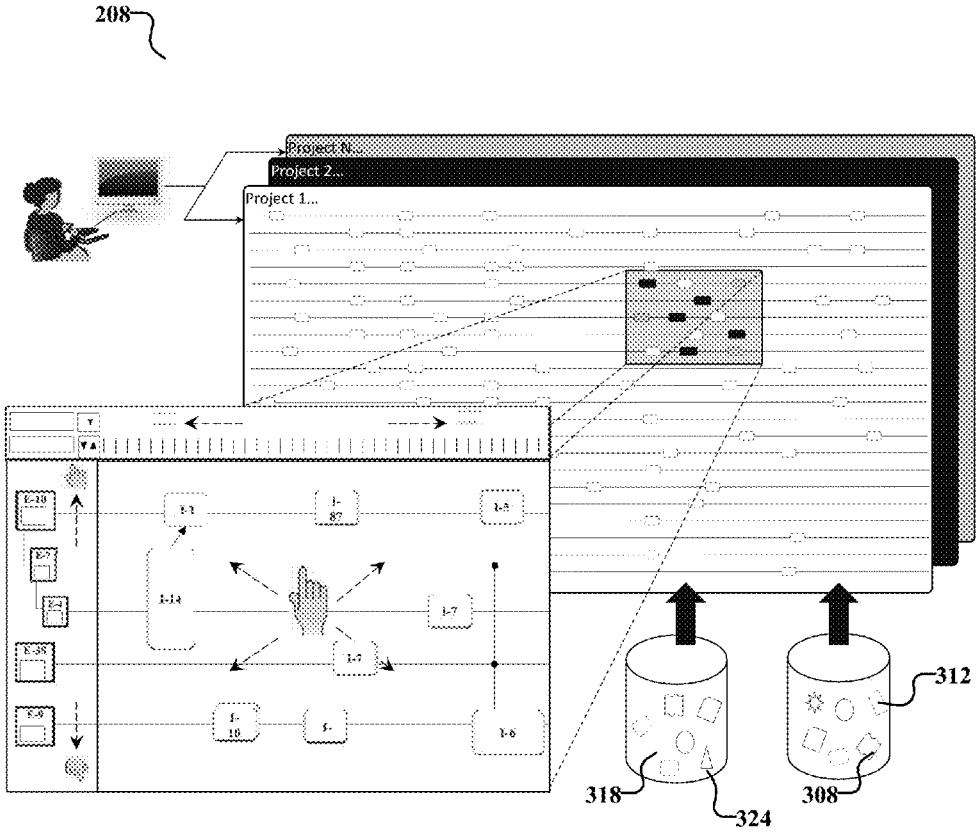


FIG. 16

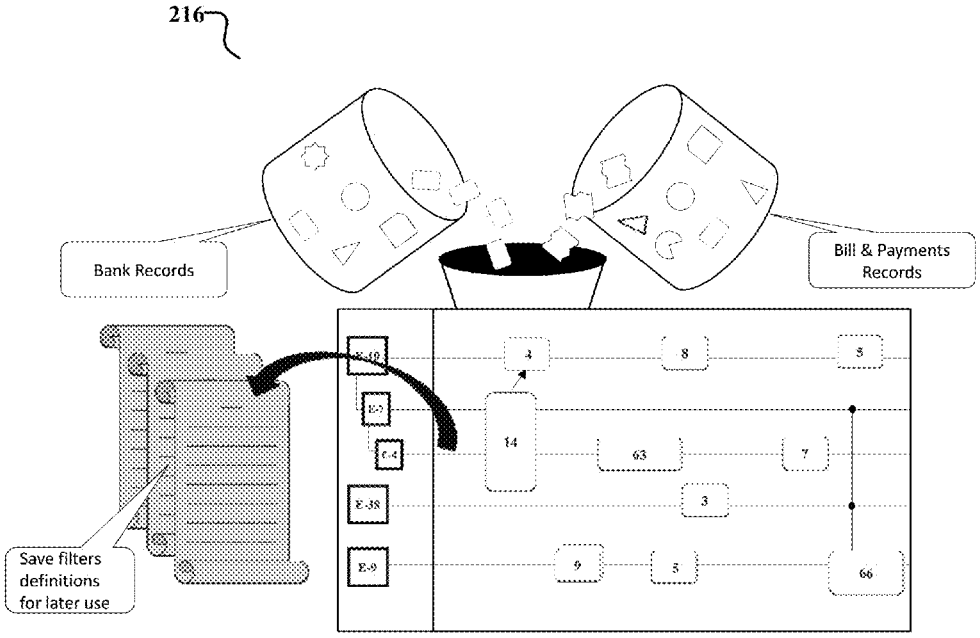

216
Bank Records
Bill & Payments Records
Save filters definitions for later use
4
8
5
14
63
7
3
9
5
66

FIG. 17

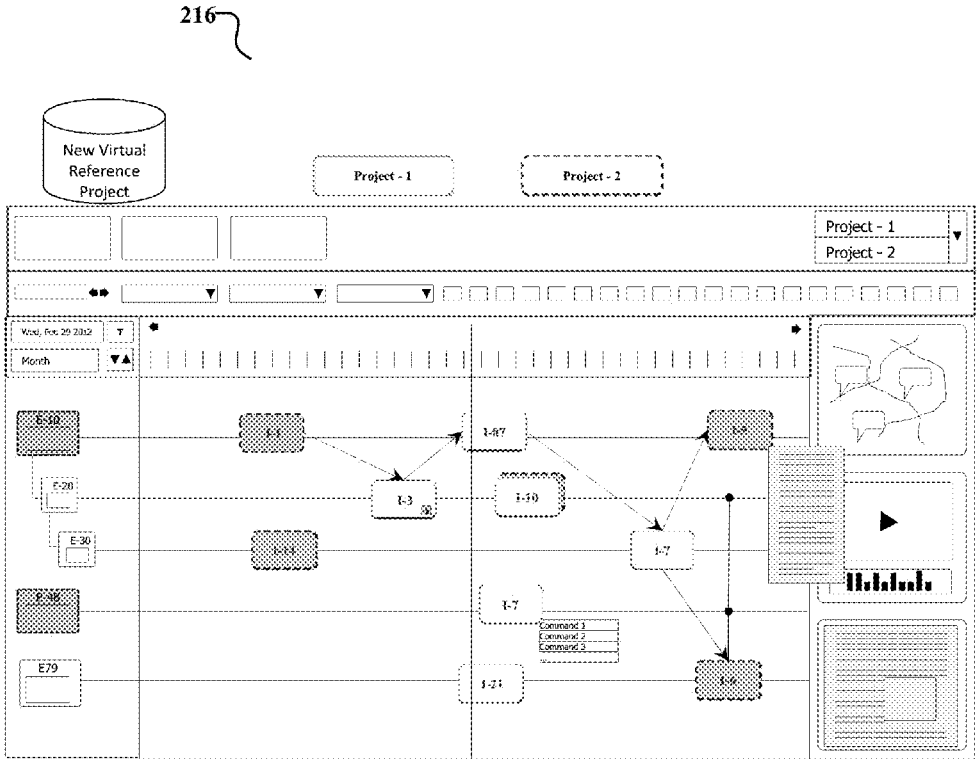

216
New Virtual Reference Project
Project - 1
Project - 2
Project - 1
Project - 2
Month
E-10
E-20
E-30
E79
Command 1
Command 2
Command 3

FIG. 18

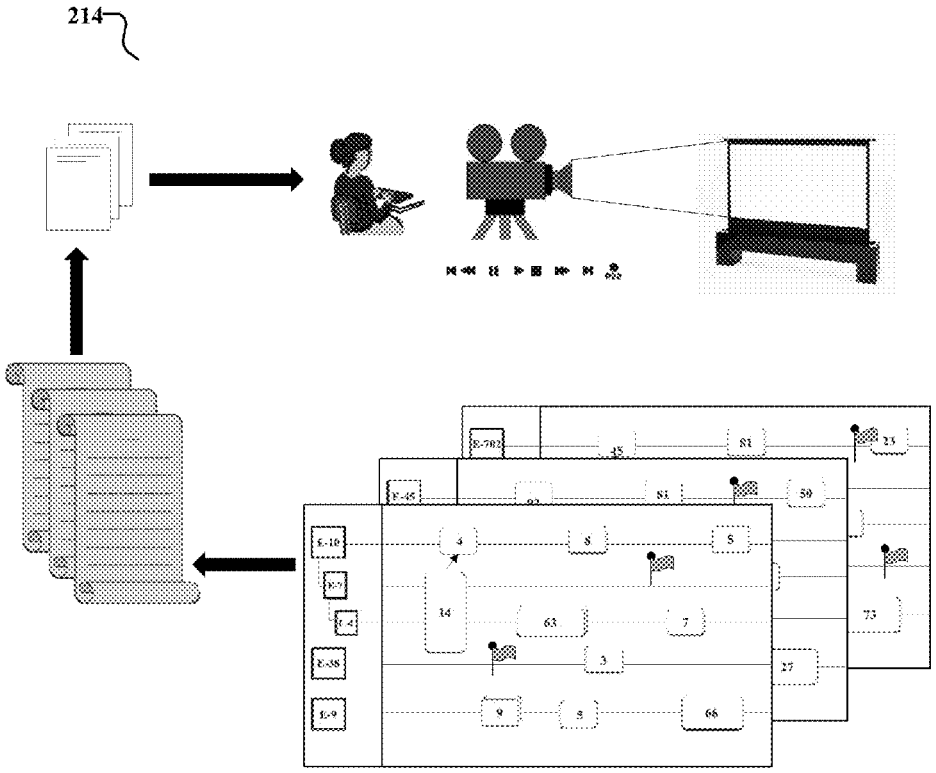


FIG. 19

ORGANIZATIONAL SYSTEM AND METHOD FOR COLLECTING, STRUCTURING, LINKING, AND PRESENTING DISPARATE INFORMATION

CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Patent Application No. 61/804,887, filed on Mar. 25, 2013, and incorporated herein by reference.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH AND DEVELOPMENT

Not Applicable.

FIELD OF THE INVENTION

This invention relates generally to structuring disparate information, and more particularly, to an organizational system and method for collecting, storing, organizing, relating, analyzing, and presenting events based on time, location, involved entities, and events.

DISCUSSION OF RELATED ART

A timeline is a method of displaying events in a list, where order is determined chronologically. Timelines are commonly found in educational settings with the purpose of helping students understand the events or relationships between events surrounding a particular topic. Timelines are also used by lawyers and law enforcement agencies to establish known information involving a particular case or entity, and by private companies for project management or analyses. Timelines can quickly become cluttered when the quantity of events, entities, and locations being observed becomes large, and they are therefore limited in their ability to display the big picture while still simplifying the relationships between the information's data elements.

Data is the abstract concept of information given to or by a user. The data being examined by a user or researcher is generally unstructured, or has a dissimilar structure, and is therefore difficult to display and relate in an intuitive manner. Once the data is processed, analyzed, and perceived by a user, it is referred to as relevant information. When displaying information, the provider typically uses other visual representations tools which accentuate the underlying pattern, complexity, or variance in the original data set.

A search engine is an application designed to provide content based information through the internet or other applications. The search engine provides an interface where the user inputs data usually in the form of keywords or sentences. The search engine then outputs the results as list of results often referred to as "search engine results pages," also known as SERP's. The SERP's are ranked based on their relevance to the search terms used. Current leading search engines include Google, Yahoo, and Bing.

While there are very powerful tools for obtaining content based information, these tools lack the cohesion that would optimize the ability of a user to effectively relate, analyze, and display this information. The user can acquire information but must bear the burden of searching for the correct data and organizing the data into meaningful a visual representations for effective analysis and presentation purposes. Hence, this process often limits the user from optimizing his/her time while synthesizing large amounts of information or data.

Therefore, a need exists for a system that organizes any content based on time, location, involved entities, and events, and relates this information to the user in an easy to read display. The present invention satisfies these needs.

SUMMARY OF THE INVENTION

The present invention is a system that organizes content based on time, location, involved entities, and events, and relates this information to the user in an easy to read and intuitive display. This is accomplished by utilizing a data acquisition module, a link generation module, a conflicts module, a graphical data intersection module, a data filtering module, a mapping module, a presentation module, and a data integration module. These modules allow for a user to input events information into an easy to manipulate multiple interactive timeline display.

The present invention is useful in today's digital era, as we are all faced with, and exposed to, an enormous amount of information that in most cases is formatted, stored, and presented in various dissimilar ways. The information at its nature may or may not be an important subject to the viewer, but once accessed, the viewer has to process it visually and mentally in order to quickly consume and comprehend its content. While the information can be free to access, such as blogs and news on the internet, unshared private information is generally protected behind security enforced data centers that require membership eligibility to access it, challenging and mandating the user to locate and access different data sources sites such as health, insurance, bank and telephone records separately.

Whatever the connotation and significance level that the information presents, most often it describes events that are subject of interest to the user and relates to diverse aspects. For example, an avid news reader can subscribe to many blogs, social media and news information sources to follow on subjects of interests such as politics, entertainment, economic or sport. At the same time, the same user can login to other information data sites such as bank accounts, wages, mortgage records, health records, insurance records and emails to follow on the status of private matter information. In most cases, information is presented to the user in three main and common formats: a) plain formatted essays, decorated with images, videos and graphic gimmicks such as news and social media data; b) information organized in logical matrix structure of listed records and tables, such as bank transactions or telephone activities records; c) a mix of both—essays and matrixes. Regardless of the presentation method, all information can generally be described as events, with each event having a person, place, and/or thing, a time, and a location. Henceforth, any unit of information can be formed and described as an event or incident, and this forms the basis of the present invention.

These and other objectives of the present invention will become obvious to those of ordinary skill in the art after reading the following detailed description of the preferred embodiments. It is to be understood that the foregoing general description and the following detailed description are exemplary, and are intended to provide further explanation of the invention as claimed.

DESCRIPTION OF THE DRAWINGS

FIG. **1** depicts a block diagram of a computer system suitable for implementing aspects of the present invention;

FIG. **2** is a diagram schematically illustrating the modules of the present invention;

FIG. **3**A is a diagram schematically illustrating entity data of the present invention;

FIG. **3**B is a diagram schematically illustrating incident data of the present invention;

FIG. **3**C is a diagram schematically illustrating link data of the present invention;

FIG. **4** is a flowchart illustrating the process flow of the present invention;

FIG. **5** is a diagram illustrating the main view of the present invention;

FIG. **6** is a diagram illustrating the data acquisition module of the present invention;

FIG. **7** is a diagram illustrating the data sources of the present invention;

FIG. **8** is a diagram illustrating entity and entity data of the present invention;

FIG. **9** is a diagram illustrating entity and entity data of the present invention;

FIG. **10** is a diagram illustrating entity and entity data of the present invention;

FIG. **11** is a diagram illustrating entity and entity data of the present invention;

FIG. **12** is a diagram illustrating the mapping module of the present invention;

FIG. **13** is a diagram illustrating the presentation module of the present invention;

FIG. **14** is a diagram illustrating the presentation module of the present invention;

FIG. **15** is a diagram illustrating the archive and data structure of the present invention;

FIG. **16** is a diagram illustrating the graphical data intersection module of the present invention;

FIG. **17** is a diagram illustrating the data integration module of the present invention;

FIG. **18** is a diagram illustrating the data integration module of the present invention; and

FIG. **19** is a diagram illustrating the module flow of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Illustrative embodiments of the invention are described below. The following explanation provides specific details for a thorough understanding of and enabling description for these embodiments. One skilled in the art will understand that the invention may be practiced without such details. In other instances, well-known structures and functions have not been shown or described in detail to avoid unnecessarily obscuring the description of the embodiments.

Unless the context clearly requires otherwise, throughout the description and the claims, the words "comprise," "comprising," and the like are to be construed in an inclusive sense as opposed to an exclusive or exhaustive sense; that is to say, in the sense of "including, but not limited to." Words using the singular or plural number also include the plural or singular number respectively. Additionally, the words "herein," "above," "below" and words of similar import, when used in this application, shall refer to this application as a whole and not to any particular portions of this application. When the claims use the word "or" in reference to a list of two or more items, that word covers all of the following interpretations of the word: any of the items in the list, all of the items in the list and any combination of the items in the list.

FIG. **1** depicts a block diagram of a computer system **100** suitable for implementing aspects of the present invention. As shown in FIG. **1**, computer system **100** includes the present invention **102**, which interconnects major subsystems such as an API server **118**, web server **120**, application server **122**, and database server **126** having a storage means **132**. The application server **122** consists of several modules **124**, and a database **128** exists on the database server **126**. The present invention **102** connects to client machines **106** and **108**, as well as 3rd party servers **114**, through a network **104**. Web clients **110** and programmatic clients **112** exist on the client machines **106** and **108**, respectively, and 3rd party applications **116** that exist on the third party server **114**.

Specifically, the present invention **102** comprises a server **126**, a database **128** residing on the server **126**, and several wired and mobile clients **110**, **112** capable of communicating with the server **126**. The primary purpose of the present invention **102** is to allow the user to organize disparate data elements and relate these elements in an easy to understand and intuitive display. Disparate data elements comprise: entities (people, places, things, organizations, groups, objects, vehicles, abstract items, etc.), units of measure (time, weight, distance, temperature, etc.), places or locations, relevant text (actions, thoughts, notes, comments, links, and bookmarks), and other internal objects (incidents, events, links, rules, etc.). The present invention utilizes eight modules to perform this task: a data acquisition module **202**, a link generation module **204**, a conflicts module **206**, a graphical data intersection module **208**, a data filtering module **210**, a mapping module **212**, a presentation module **214**, and a data integration module **216**. In conjunction, these modules allow a user to assimilate and visualize a large set of similar or dissimilar data in a plurality of ways, as well as analyze, validate for conformity or discrepancy, and account for data elements within such a set.

The data acquisition module **202** is configured to receive and store project data **302**. Project data **302** comprises events **304**, entities **306**, incidents **316**, and links **324**, and is stored on a non-transitory storage medium **130**. An event **304** comprises one or more related incidents **316**. An incident **316** comprises incident data **318** further comprising a plurality of entities **306**, a time **320**, and an incident description **322**, but must include at least one entity **306** and a time (or duration) **320**. An entity **306** comprises entity data **308** further comprising a person **310**, place **312**, or thing **314**. Project data **302** may be entered manually or automatically.

Incidents **316** and entities **306** are stored as independent data units, and as such, an incident **316** can be part of multiple different events **304**, and an entity **306** can be part of multiple different incidents **316**. An incident **316** or entity **306** may further comprise an archive **346**, which acts as a special information vault to any data element in the project for storing additional related data files. Archive data files **346** further comprise audio files, video files, images, documents (text and scanned documents), contact information, surveillance video, address history, biographical information (such as personal, educational, marital and employment information), known names, alerts, locations, identification information, and binary files. The archive **346** is full-text indexed and used as an input for search, analysis and conflict management, and functions as a storage data center for incidents **316** as well as other data elements. Furthermore, entities **306** are hierarchically structured into parent entities and child entities, wherein parent entities may comprise one or a plurality of child entities.

Person, or who-data, **310** comprises who and/or what was involved in an incident **316**. In other words, "who are the actors or participants who initiated or were involved in the incident?" These can be passive or active entities **306**, such as witnesses or spectators. These entities **306** are not limited to

people, but may comprise five varieties: people, organizations or groups which form a relevant unity to the incident, objects whose function serves a rational purpose to the incident occurrence, vehicles which participate in the incident, and abstract entities which impact the incident. Abstract entities comprise documents, credit cards, ideas, account numbers, email addresses, or other data.

Place, or where-data **312**, comprises where an incident **316** took place, including land, sea, air, or other abstract locations. More specifically, where-data is defined by the location of the given incident, which can have a plurality of descriptors, comprising: a physical street address, a longitude and latitude point, an altitude, an elevation, a depth, an azimuth, an angle, or a general place description (library, cockpit, laboratory, etc.) for which an exact physical location is unimportant.

Thing, or what-data **314**, comprises the physical action which describes an incident **316**, what has happened in an incident, a description of the event or incident, what actions took place, or what thoughts/intentions were involved. What data **314** can be expressed as a text file, an audio file, a video file, an image, or any similar data point that accurately describes the occurrence of the related incident **316**. Thing data **314** may be stored as an entity **304**, as an incident description **322**, as an archive data file **346**, or any plurality of the three.

Time, or when-data **320**, comprises when an incident **316** or event **304** occurred, and may include duration. More specifically, when-data **320** is defined by the date, time, and time zone that the given incident occurred, either by a single time and date, or a window of time and dates representing the starting and ending time of an incident. In an alternative embodiment, time (or duration) **320** can be replaced with any unit of measure (time, weight, distance, temperature, etc.). As such, when-data **320** is measured according to the terms of the unit of measurement in the scale bar section of the graphical data intersection module.

As mentioned above, the data acquisition module **202** may receive input manually or automatically. Manual input requires the user to actively enter project data **302** into the relevant data types using the graphical data intersection module **208** or through an appropriate application interface. Automatic input receives electronically transmitted source data from a server, gateway, or any other source, parses said data for people **310**, places **312**, things **314**, times **320**, and automatically populates events **304**, incidents **316**, entities **306**, and links **324**. Source data (FIGS. **7**, **8**) comprises web blogs, RSS feeds, application widgets, databases and information triggers, social media data, mobile device data, internal/external application program interfaces, messaging systems, cloud infrastructures, and other relevant sources of data. In an alternative embodiment, automatically populated data is stored in a queue and processed after an administrator or user approves the parsed data. Here, all electronic data messages are placed into a queue, where a trigger will invoke the data acquisition module to process the information. When unattended, the information is introduced and flagged as new to draw the user's attention. When attended, the user can hold the information in the queue, reject the information and notify the sender of the rejection, or accept the information into the project.

The link generation module **204** is configured to generate links **324**, wherein links **324** further comprises an association between incidents **316** having common entity **306** or incident data **318**. The link generation module **204** provides the ability to associate events **304**, incidents **316**, entities **306**, and other relevant data to each other and indicate them as a part of a broader information gathering for analysis, briefing, and presentation purposes. Linking between incidents **316** is commonly described as a "Line of Inquiry", or simply, "LOI." The number of LOI definitions in each project **302** is unlimited. Incidents **316** can be associated to a single or multiple LOIs. By associating incidents **316** to LOIs, a theme or trend of occurrences is revealed and displayed.

Links **324** further comprise native links **330**, relative manual links **332**, and relative automated links **334**, and can be created automatically or manually. Automated links include native links **330** and relative automated links **334**. Native links **330** are an automatically generated link **324** between incidents **316** having common entities **306**. Relative automated links **334** are automatically created when the link generation module **204** evaluates and compares incidents **316** for common associations, such as places **312**, times **320**, entities **306**, or keywords and their synonymous, and generates a link strength. A relative automated link **332** is automatically generated between incidents **316** if the link strength is above a link strength threshold value. Relative manual links **332** are user-created links **324** between related incidents **316**. Relative manual links **332** are important because, once an LOI link is established, the user can enhance it by adding relative manual links **332** to other incidents using user discretion.

When a link **324** is formed between two or more incidents **316**, a directed line is drawn connecting the incidents **316**. For automated links, the lines are generated automatically, while manual links are created by drawing a line between two or more incidents **316** and providing link data **326**. Links **324** can have different graphical characteristics such as line color, thickness, or line style to differentiate them from each other when displayed. Multiple links **324** can be displayed all at once, or hidden, as determined by the user, and link strength may further dictate link type and whether a link **324** will be displayed or hidden. Links **324** can also be used as a filter to exclude non-relevant information from being displayed and as desired by the user.

The link generation module **204** further comprises rules **336**. Rules **336** are persistent search queries associated with incidents **316**, entities **306**, or timeframes **320**, wherein each rule **336** further comprises a keyword, timeframe, and action. In other words, rules **336** are a type of relative automated link **334** wherein the link strength is always above the link strength threshold value, and as such, a relative automated link **334** is always created when the rule **336** is satisfied. For example, a rule **336** may be created to generate a link **324** between any incidents **316** having the keywords "desert eagle" between 2004 and 2008. Rules **326** will have a separate line type and color to differentiate them from other link types.

The conflicts management module **206** comprises comparing and analyzing incident data **318** for all incidents **316** and determining whether they are consistent with one another. When a conflict occurs, the related incidents **316** are flagged and brought to the user attention. Specifically, the involved incidents **316** are flagged and displayed on the mapping module **212** as well as the graphic data integration module **208**, where the user can approve of the conflict, reject the conflicting data, or modify the conflicting data. The user can provide general conflicts rules definitions or rely on existing types, which are constantly calculated as new data is entered.

A time-distance conflict comprises a conflict in which the possibility that a single entity **306** involved in two incidents **316** at different locations **312** and different times **320** can be verified or invalidated based on physical limitations such as travel speed. Here, a first incident having a first location is compared with a subsequent incident having a second location. A velocity is generated by calculating the distance

between the incidents and the time difference, and dividing the distance by the time. If the velocity between the first incident and the second incident is above a threshold value, the first and second incidents are flagged. For example, the project data **302** indicates that John was involved with incidents in Seattle and Miami that were 120 minutes apart. The distance between the two is approximately 3000 miles, and as such, John's velocity is 1500 miles/hour. This condition triggers the time-distance conflict because it is not possible to travel at those speeds.

A second type of conflict comprises a statistical conflict, wherein statistical information of an entity **306**, location **312**, and time **320** is examined, and if a predefined threshold is reached, a statistical computation flag is executed to notify the user. A third type of conflict comprises a location trace, where the location of incident A is unknown, but the metadata of incident A matches 80% of the metadata of five other known incidents. As such, there is a likelihood that incident A occurred at a location similar to the other five related incidents, which triggers the location trace flag. A last type of conflict comprises an information conformity conflict, where unique data types are compared. For example, if two firearms are found to have the same serial number, this condition triggers the information conformity conflict, and the entity **306** or incident **316** is flagged and the user is notified of such conflict.

Once a conflict is discovered, a visual alert is presented to the user. The alert form comprises of a popup, text box, selection box, differently colored flag, or any other combination. Alerts may include sounds and/or vibration for further alerting the user of an existing conflict. Alerts may occur during analysis or in real time as information is dynamically received. Furthermore, users may create an alert within an incident to notify other users of important or critical information.

The graphical data intersection module **208** is configured to display events **304**, incidents **316**, entities **306**, and links **324** on a scalable timeline **338** or valueline, wherein entities **306** are displayed on a first axis **340**, time **320** (or measurable value) is displayed on a second axis **342**, incidents **316** are displayed as intersections between related first and second axes, and links **324** are displayed as lines between incidents **316**. The graphical data intersection module **208** further comprises eight main sections: a main menu **360**, a toolbar **362**, an adjustable entity pan **364**, an enhanced information center **366**, a scale bar **368**, an events pan **370**, and project information section **372**, and a project overview center **374**.

The main menu section **360** comprises a thin strip which spans across the entire width along the top of the graphical interface display screen. This section contains the user access points for major tools and functions concerning the system management and project currently displayed. The toolbar section **362** also comprises a thin strip which spans across the entire width of the display, and is located directly beneath the main menu section **360**. The toolbar section **362** contains commands and tools to maintain and manipulate the information particular to the project **302** currently being displayed. The project information section **372** comprises a thin expandable strip which spans across the entire width of the display, and is located directly beneath the toolbar section **362**. The project information section **372** contains general and statistics information about the project **302**.

The adjustable entity pan section **364** comprises a rectangular panel which is justified along the left edge of the display screen and is seated directly below the toolbar section **362**. The entity pan **364** displays any number of people, places, objects, or similar entities **306** which are currently being examined by the user. These entities **306** are participants involved in one or more incidents **316** being tracked by the present invention **102**, and can be used to filter results displayed in other sections of the graphical interface. Additionally, the user may focus on an entity **306**, which will organize and display all incidents **316** pertaining to the focused entity **306** within the adjustable entity pan **364**. The adjustable entity pan **364** allows the user to organize its content, whether it is entities **306**, incidents **316**, or places **312**, in a desired order and in hierarchical parent-child tree view relation for better visualization and readability. The reorder and tree view structure is achieved through a drag-and-drop operation, keyboard commands, or menu commands. The adjustable entity pan **364** also permits the user to scroll up and down through its content using drag or inertial dragging.

The enhanced information center section **366** comprises a rectangular panel which is justified along the right edge of the display screen and is seated directly below the scale bar section **368**. The enhanced information center **366** contains specific details pertaining to all or individually selected incidents **316** or entities **306**, including, but not limited to: dynamic maps, images, audio and video files, and documents. If multiple details files pertaining to incident **316**, entity **306**, or place **312** are available, they can all be displayed at once, or individual files can be selected, played, and/or expanded by the user. The enhanced information center **366** can be displayed or hidden as desired to allow more display space for the events pan section **370**.

The scale bar section **368** comprises a thin rectangular panel which spans the distance between the top right edge of the adjustable entity pan **364** and the top left edge of the enhanced information center **366**. The scale bar **368** is configurable to any unit of measure upon which the stored data is related to, including but limited to: date and time, temperature, pressure, current, power, speed, velocity, and other relevant values. The scale bar **368** allows the user the ability to pan left or right through the varying units of measure, as well as have the scope of the unit of measure widened or lessened as desired. Special scale controls allow the user to change the scale to a desired scope, which in effect widen or narrows the amount of the displaced information in the event pan section **366**. For example, in case of time related data, the user can select a six month range of information scope and certain date and time to center the display on. The display will then change to reflect this scope (e.g. January 15th to June 14th) time range and display the relevant information that corresponded to it. The user can then pan left or right to view other time related information corresponding to the current scale's time scope.

The graphical data intersection module **208** will further provide a wide range of preset scales or ranges from seconds to years. However, the user can create his or her own user-defined scale definitions which are natively incorporated into the scale bar section. By using the mouse wheel-in and mouse wheel-out, scales are automatically changed, creating zoom-in and zoom-out display effects, which causes the geometric shapes on the project's display to increase and decrease respectfully. The scale controls also provide the option to dynamically change the current view by increasing or decreasing the viewed time scope. For example, if the current time scope is six months—(i.e. 1/1/2012 to 6/30/2012, scale range is six months)—and the user wishes to add one month only to the time scope, then he or she can use the "add time" control which will result by the system recalculating the events' pan section **370** display to show information between 12/16/2011 to 7/15/2012, now displaying seven month time scope. If the user uses the "reduce time" control to narrow the

time scope by one month, the system will recalculate the events' pan section display to show information between 1/16/2012 to 5/15/2012, displaying a five month time scope. The add-reduce time scope can be performed on any scale type, e.g. seconds, minutes, hours, days, weeks, months and years.

The events pan section **370** is a rectangular panel which spans the distance between the remaining right edge of the adjustable entity pan **364** and the remaining left edge of the enhanced information center **366**, when displayed, or the right edge of the screen. Events **306**, incidents **316**, and analysis information is displayed in the events pan **370** and represented by geometric shapes. The information displayed within the events pan **370** can be divided into chapters, and further divided into episodes within a chapter. Particular events **306** or incidents **316** can be selected and expanded within the events pan **370**, as well as assigned a shape, color, and other graphical symbols to be determined by the user.

The event pan section **370** acts as an events information mapping. The user can drag it in all direction—left, right, up, down and diagonally. By rolling the mouse wheel in or out (known as mouse-in or mouse-out computer events), the scales level changes and the displayed information scope is widen or narrowed while recalculating the geometrical shapes position and displaying the corresponding events **306**, incidents **316**, and links **324** accordingly. In addition, the user can double-click on any area of the events pan section **370** to center it on the screen and perform zooming-in operation.

Events **304** and incidents **316** are displayed as geometric shapes within the events pan section of the graphical display. Incidents **316** comprise an information container that assimilates all the incident's factual, analysis and enhanced information. An incidents **316** horizontal position on the event pan section is determined by its measurements units (i.e. date and time, temperature, power, etc.) and its vertical position is determined by its association with the entity **306** in the entity pan. The incident's **316** height and width geometric dimensions are determined by the scale level definitions. The broader the scale scope (in terms of displayed measurements units), the smaller the incident's **316** height and width dimensions. The narrower the scale scope, the larger the incident's **316** height and width dimensions.

Different icons, symbols, indicators and other geometric shapes and gages can be attached to each incident **316** by the user to quickly identify the incident data **318** and status, its association to line of inquiry, participation in filters, level of importance, archived information, and much more. Each incident's **316** look and feel design comprises of two forms, horizontal and vertical. The user can manually resize an individual incident **316**, and the event pan display automatically adjusts surrounding incidents **316** to best fit the display space. By using the commands on the toolbar, the user can manipulate the event pan section display to effectively enhance the user visualization experience. Such commands allow the user to increase, decrease or reset all incident's **316** geometric sizes at once, increase or decrease spaces between incidents **316** on the screen, highlight group of connected events, drag event **304** to another location on the screen, and much more.

The project overview center **374** comprises a birds eye view of the entire project **302**, specifically, events **304**, incidents **306**, entities **306**, and links **324** outside the scope of the current view. The project overview center **374** will always scale to display all data for the entire project **302**. As such, the project overview center **374** is critical when quickly jumping to a second timespan when viewing data in a first timespan, or vice versa. Furthermore, the project overview center **374** provides a quick, visual representation of the project **302** as a whole, where incident **316** density can be increasingly important.

The data filtering module **210** comprises a filtering mechanism that permits the user to perform a deep-level search on any keywords that are associated with any project's data **302**. Here, events **304**, incidents **316**, entities **306**, or links **324** can be displayed or hidden based on manual grouping or keyword search criteria. Once a filter is activated and results are found, the graphical data intersection module **208** calculates and redisplays the entity and event pans sections with the newly selected incidents **316**. The incidents **316** which were excluded by the search terms are temporarily hidden from the user, allowing the user to focus on a smaller set of incidents **316**. Filter keywords sets can be named and saved, and the user can reactivated the search by recalling the filter.

The mapping module **212** is configured to graphically display the location **312** of incidents **316** and entities **306** for visual analysis. Here, incident **316** and entity **306** locations **312** are displayed on a map by online interfacing with external mapping utilities and displaying their location markers and related analysis information such as conflicts, alerts, statistics, and other graphical elements. The mapping module **312** can display incident **316** locations only, entity **306** locations only, or any combination of the two where any association is found. A time **320** or time range can be selected to scope out which incidents' **316** locations **312** should participate in the mapping view. A list of participating incidents **316** and alerts is optionally presented in the left side pan and the user can select or deselect which information should be displayed at any given time and as desired. In addition, a list of participating locations **312** in the map is optionally presented in the right side pan and the user can select or deselect which location(s) **312** should be displayed on the map and as desired. A comprehensive information tooltip can be optionally displayed to enhance the information clarity. Based on predefined possible conflicts, the mapping module **212** will further display links **324** and conflicts between events **304** or incidents **316** and allow the user to dynamically manage these conflicts definitions. Distance, traveling speed, frequency of occurrence, travel route, location prediction, and other statistical computations can all be displayed in the mapping module **212**.

The presentation module **214** is configured to chronologically playback each incident **316**, wherein said playback further comprises focusing on an incident **316**, playing archive media files, displaying the location **312** in the mapping module **212**, and reading aloud incident data **318**. The presentation module **214** comprises four main functions: a) creation of a presentation script; b) presentation tickets generation; c) playing said presentation script (presentation playback); and d) presentation recording. The presentation module will be available on cue, as projects in their creation process or completed state may need to be shared and presented to the stakeholders and/or supervisors in different settings.

While each project is being populated with data, the present invention **102** tracks the project's data **302** and creates a baseline presentation script which contains step-by-step presentation playback instructions. The baseline presentation script can be used to create new scripts while omitting and reordering playback instructions. In addition, the user can add presentation audio notes, timing instructions, and textual footnotes or subtitles to enhance the presentation viewing experience. For each presentation script, the user can generate presentation tickets that can be disseminated to the targeted audiences by any electronic means. These presentation tickets can be assigned to individuals or groups and timely

restricted by expiration date. Using the presentation ticket, the user can activate the presentation while using VCR-like controls to control its sequencing and progress. While viewing the project's information, and if permitted by the project's owner or the presentation script author, the viewer can record the presentation information and create a script-based project on a local or network storage.

The data integration module **216** is configured to combine project data **302** comprising events **304**, incidents **316**, entities **306**, and links **324** from a plurality of projects for visual display through the graphical data intersection module **208**, wherein said project data **302** is distinguished through transparency, color difference, line type, line formatting, and incident shape. The data integration module **216** allows the user to view several projects' information in one session for comparison and analysis. Here, multiple projects are displayed in the events and entities pan, which can be compared, assessed, analyzed, edited, linked, and otherwise manipulated as if they were in the same project. Conflicts and alerts are also calculated and displayed once multiple projects are combined. The user can quickly return to the individual projects by using the toolbar to switch to single project mode. Joint information sharing can be limited using permissions, where the project's owner has absolute control when and what information can be exposed, viewed, and/or edited by other users. Dynamic projects can be created and saved when multiple projects are combined, so long as permission has been granted.

When in use, the present invention **102** will receive events **304**, incidents **316**, and entities **306**, generate native **330** and automated relative links **332**, and display said events **304**, incidents **316**, entities **306**, and links **324** on a scalable timeline **338** (or valueline), wherein entities **306** are displayed on a first axis **340**, time **320** (or measurable value) is displayed on a second axis **342**, incidents **316** are displayed as intersections between related first **340** and second axes **342**, and links **324** are displayed as lines between incidents **316**. Events **304**, incidents **316**, entities **306**, and links **324** can be hidden or displayed based on manual grouping or keyword search criteria, and all data is stored as a project **302** on a non-transitory computer readable medium **130**. The present invention **102** permits users to collect, organize, and relate disparate information in one common interface.

The above detailed description of the embodiments of the invention is not intended to be exhaustive or to limit the invention to the precise form disclosed above or to the particular field of usage mentioned in this disclosure. While specific embodiments of, and examples for, the invention are described above for illustrative purposes, various equivalent modifications are possible within the scope of the invention, as those skilled in the relevant art will recognize. Also, the teachings of the invention provided herein can be applied to other systems, not necessarily the system described above. The elements and acts of the various embodiments described above can be combined to provide further embodiments.

Changes can be made to the invention in light of the above "Detailed Description." While the above description details certain embodiments of the invention and describes the best mode contemplated, no matter how detailed the above appears in text, the invention can be practiced in many ways. Therefore, implementation details may vary considerably while still being encompassed by the invention disclosed herein. As noted above, particular terminology used when describing certain features or aspects of the invention should not be taken to imply that the terminology is being redefined herein to be restricted to any specific characteristics, features, or aspects of the invention with which that terminology is associated.

While certain aspects of the invention are presented below in certain claim forms, the inventor contemplates the various aspects of the invention in any number of claim forms. Accordingly, the inventor reserves the right to add additional claims after filing the application to pursue such additional claim forms for other aspects of the invention.

What is claimed is:

1. An organizational system for structuring disparate information, the system comprising:

a data acquisition module configured to receive entities and incidents, wherein entities further comprise entity data containing a person, place, or thing, and wherein incidents further comprise incident data containing at least one entity, a time, and an incident description;

a link generation module configured to generate links, wherein links further comprise an association between incidents having different entities and different times;

a graphical data intersection module configured to display entities, incidents, and links on a scalable timeline, wherein entities are displayed on a first axis, time is displayed on a second axis, incidents are displayed as intersections between related first and second axes, and links are displayed as lines between incidents;

a data filtering module adapted to hide or display entities, incidents, or links based on manual grouping or keyword search criteria; and

a non-transitory storage medium configured to store said entity data, incident data, and links as a project;

wherein said organizational system for structuring disparate information permits users to collect, organize, and relate disparate information in one common interface.

2. The system of claim **1**, further comprising:

a mapping module configured to graphically display the location of entities and incidents;

a data integration module configured to combine project data comprising entity data, incident data, and links from a plurality of projects for visual display through the graphical data intersection module, wherein said project data is distinguished through transparency, color difference, line type, line formatting, and incident shape; and

a conflicts management module configured to analyze incident data for conflicts and flag conflicting incidents, wherein conflicts further comprise time-distance conflicts and statistical conflicts.

3. The system of claim **2**, wherein said conflicts management module further comprises searching each entity for a first incident having a first location and a subsequent incident having a second location, calculating a velocity between said first and second incidents, and flagging said first and second incidents if said velocity is over a velocity threshold value.

4. The system of claim **1**, further comprising a presentation module configured to chronologically playback each incident, wherein said playback further comprises focusing an incident, playing media files, displaying the location, and reading aloud incident data.

5. The system of claim **1**, wherein said data acquisition module further comprises receiving source data, parsing said source data for people, places, things, times, and incidents, and automatically populating said entities, incidents, and links with said parsed data.

6. The system of claim **1**, wherein said entities further comprises parent entities and child entities, wherein said parent entities and child entities are hierarchically structured and displayed.

7. The system of claim 1, wherein said links further comprise native links between incidents having a common entities, and relative manual links created due to user input between related incidents.

8. The system of claim 7, wherein said links further comprise relative automated links generated when link strength between incidents is above a link strength threshold value, wherein said link strength is calculated by evaluating and comparing all incident data for common associations, wherein said link strength threshold value dictates a line type.

9. The system of claim 8, wherein said link generation module further comprises rules, wherein rules are persistent search queries associated with incidents, entities, or timeframes, wherein each rule further comprises a keyword, timeframe, and action.

10. The system of claim 1, wherein the data acquisition module further comprises an archive associated with an incident, entity, timeframe, or link, wherein said archive further comprises receiving and storing audio files, video files, images, documents, text, locations, and binary files.

11. A processor-implemented method for organizing event-driven information, the method comprising:

receiving entities and incidents, wherein entities further comprise entity data containing a person, place, or thing, and wherein incidents further comprise incident data containing at least one entity and a time;

generating links, wherein links further comprise an association between incidents having different entities and different times;

displaying entities, incidents, and links on a scalable timeline, wherein entities are displayed on a first axis, time is displayed on a second axis, incidents are displayed as intersections between related first and second axes, and links are displayed as lines between incidents;

hiding or displaying entities, incidents, or links based on manual grouping or keyword search criteria; and

storing said entity data, incident data, and link data as a project on a non-transitory computer readable medium;

wherein said event-driven information organizational system permits users to collect, organize, and relate disparate information in one common interface.

12. The method of claim 11, further comprising:

graphically display the location of entities and incidents on a map;

combining entity data, incident data, and link data from a plurality of projects; and

analyzing incident data for conflicts and flagging conflicting incidents, wherein conflicts further comprise time discrepancies, distance discrepancies, and statistical discrepancies.

13. The method of claim 11, further comprising chronological playback of each incident, wherein said playback further comprises focusing an incident, playing media files, displaying the location, and reading aloud incident data.

14. The method of claim 11, further comprising receiving source data, parsing said source data for people, places, things, times, and events, and automatically populating said entities, incidents, and links with said parsed data.

15. The method of claim 11, further comprising organizing entity data as parent entities and child entities, wherein said parent entities and child entities are hierarchically structured and displayed.

16. A non-transitory computer-readable storage medium storing a set of instructions that, when executed by a processor, cause the processor to perform operations, comprising:

receiving entities and incidents, wherein entities further comprise entity data containing a person, place, or thing, and wherein incidents further comprise incident data containing at least one entity and a measurable value;

generating links, wherein links further comprise an association between incidents having different entities and different times;

displaying entities, incidents, and links on a scalable valueline, wherein entities are displayed on a first axis, said measurable value is displayed on a second axis, incidents are displayed as intersections between related first and second axes, and links are displayed as lines between incidents;

hiding or displaying entities, incidents, or links based on manual grouping or keyword search criteria; and

storing said entity data, incident data, and link data as a project;

wherein said event-driven information organizational system permits users to collect, organize, and relate disparate information in one common interface.

17. The non-transitory computer-readable storage medium of claim 16, further comprising:

graphically display the location of entities and incidents on a map;

combining entity data, incident data, and link data from a plurality of projects; and

analyzing incident data for conflicts and flagging conflicting incidents, wherein conflicts further comprise measurable value discrepancies, distance discrepancies, and statistical discrepancies.

18. The non-transitory computer-readable storage medium of claim 16, further comprising chronological playback of each incident, wherein said playback further comprises focusing an incident, playing media files, displaying the location, and reading aloud incident data.

19. The non-transitory computer-readable storage medium of claim 16, further comprising receiving source data, parsing said source data for people, places, things, times, measurable values, and events, and automatically populating said entities, incidents, and links with said parsed data.

20. The non-transitory computer-readable storage medium of claim 16, further comprising organizing entity data as parent entities and child entities, wherein said parent entities and child entities are hierarchically structured and displayed.

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